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PLANTER'S GUIDE

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PATTEN'S XX PLUM
Originated by C. G. Patten, Charles City, Iowa

PLANTER'S GUIDE

A Handbook of Information for the
Guidance of Amateur
Planters of

FRUITS WINDBREAKS AND ORNAMENTALS

In the Colder Sections of the United States

— BY —

CLAFENCE WEDGE
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ALBERT LEA PUBLISHING CO.
Albert Lea, Minn.

FRUITS FOR MINNESOTA PLANTING

Adopted by the Minnesota State Horticultural Society for the Guidance of Planters in Minnesota.

APPLES

Of the first degree of hardiness: Duchess, Hibernal, Patten's Greening, Okabena.

Of the second degree of hardiness: Wealthy, Malinda, Anisim, Iowa Beauty, Lowland Raspberry, Jewell's Winter, Milwaukee.

Most profitable varieties for commercial planting in Minnesota: Wealthy, Duchess, Patten's Greening, Okabena, Anisim.

Varieties for trial: Eastman, Evelyn, Windsor Chief.

Valuable in some locations: Wolf River, Yellow Transparent, Longfield, Northwestern Greening, Tetofsky, Peerless.

CRABS AND HYBRIDS

For general cultivation: Florence, Whitney, Early Strawberry, Sweet Russet, Transcendent.

Varieties for trial: Faribault, Dartt, Success.

PLUMS

For general cultivation: DeSoto, Forest Garden, Wolf (freestone), Wyant, Stoddard, Terry.

Most promising for trial: Compass, Hanska, Opata, Sapa.

GRAPEs

First degree of hardiness: Beta, Janesville.

Second degree of hardiness: Moore's Early, Campbell's Early, Brighton, Delaware, Worden, Concord, Moore's Diamond, Wyoming Red.

RASPBERRIES

Red varieties: King, Turner, Miller, Loudon, Minnetonka Ironclad, Sunbeam.

Black and purple varieties: Palmer, Gregg, Older, Columbian, Cumberland.

BLACKBERRIES

$\frac{1}{4}$ Ancient Briton, Snyder, Eldorado.

CURRENTS

White Grape, Victoria, Long Bunch Holland, Pomona, Red Cross, Perfection, London Market.

GOOSEBERRIES

Houghton, Downing, Champion, Pearl, Carrie.

STRAWBERRIES

Perfect varieties: Bederwood, Enhance, Lovett, S lendid, Glen Mary, Clyde, Senator Dunlap.

Imperfect varieties: Crescent, Warfield, Haverland, Marie. Everbearing varieties for trial: Progressive, Superb, Americanus.

NATIVE FRUITS

Valuable for trial: Dwarf Juneberry, Sand Cherry, Buffalo Berry, High Bush Cranberry.

PLANTER'S GUIDE

We publish this booklet of information for the instruction and guidance of those who plant trees, fruits or flowers in the North Mississippi valley, where the authors have had a life-time experience. Plants of all kinds behave differently and require very different treatment in other climates and situations. We do not attempt to give advice to those living outside the great region extending from Lake Michigan to the Rocky Mountains, and from Missouri to Lake Winnipeg. But we have had extensive experience and travel within this territory and endeavor to give the benefit of what we have learned in as clear, unprejudiced and simple a manner as possible, hoping and believing that it will prove a safe and reliable guide to the beginner, and contain suggestions of value to the professional horticulturists.

On the opposite page we print the fruit list adopted by the Minnesota State Horticultural Society by an almost unanimous vote. This is the largest and most influential horticultural society in the United States, having a membership of over 3,000, and being centrally located in the region above described, its recommendations have become a standard authority on varieties adapted to general planting. From this list we have selected the fruits that seem to be giving the greatest satisfaction, and described them carefully and impartially, giving their faults as well as their merits. Trees, as well as men, have their faults and weaknesses, which it is best to understand and perhaps provide against at the start, rather than to discover after years of labor have been bestowed upon them.

The description of the varieties and the directions for their planting are newly written each year and represent our latest experience in the orchard and nursery, together with such ideas as we are able to get from horticultural meetings and farmers' institutes. Our aim is to make this annual something that every planter in the North will consider worth reading and worth preserving.

GENERAL INSTRUCTIONS

Where to Plant.

Land that is suited to the growth of the common farm crops is usually safe to use for planting to any of the trees or plants mentioned in this book.

There is scarcely anything that will do its best in land too low or wet to yield a good crop of corn or potatoes. The elm and willow manage to keep alive in pretty wet places, but they will always do better in well drained farm soils. A fruit tree is expected to do something more than merely exist. We want it to thrive and bring forth fruit, so we must give it a good chance where it can do its best. If the requirements of a good farm crop are kept in mind the orchard or berry patch will not be beneath or near large cottonwoods or willows or anything that rob them of their share of moisture or sunlight. Neither will they be planted on a gravel knoll where anything would be starved and stunted. They will not fail to receive their protection from live stock that is always given to the farm crops. Other things being equal almost all fruits do a little better on a northerly slope than on any other, the south slope being the most undesirable. Some of the best orchards in the country are situated on northerly slopes so steep as to make them unfit for farming. However we find good orchards and gardens on level land and on land sloping in all directions, so that no one need doubt of success whatever the slope of the land, if only they have a soil and situation that will raise a good farm crop and will give their fruit or trees the same

thorough and timely attention that a good farmer does his field crops.

When to Plant. In the moister air of the Eastern Coast states many things can be better planted in the fall than in the spring, but in our section the things that are safe to plant in any other months than April and May can be told on the fingers of one hand, and most of these will also do well with spring planting. Stock received in the fall should be carefully buried, root and branch, undoing the package in which it is shipped, breaking all bundles apart, and working in the soil about each root as carefully as when planting to stay. After filling in the hole with dirt, and leaving the place exposed till frozen solid to the bottom, the ground should be mulched to keep it frozen till spring, when the trees can be taken out and set where they are to stay at the convenience of the planter.

The principal exceptions to the above rule are found in the peony, iris, phlox, gaillardia and the class of plants known as hardy perennials, all of which can be planted with the very best results in a moist time in August or September. They also succeed well with the usual spring planting. Tulips, hyacinths, narcissus, and the whole list of Dutch bulbs can only be planted in the fall, September and October being generally thought the best months.

How to Plant. In receiving nursery stock, all possible pains should be taken to prevent the roots from being exposed to the air for even a few minutes. One of the best methods is to dip the bundle in a tank or pool of water as soon as it has arrived, and opening in a shady, sheltered place, heel in the roots in good, moist soil while the holes are being dug and the planting begun. The holes, which should be large enough to accommodate the roots without bending or bruising, we prefer to dig as the trees are being set, so that the soil will not lose its

moisture by being exposed to the sun and wind. In planting, place the tree in the hole a little deeper than it stood in the nursery.

A very convenient way of preventing exposure of the roots while carrying them from the place where they are heeled in, is to prepare a pail or small box of mud, and placing it in a wheelbarrow use it to convey a portion of the trees with their roots immersed in the mud to the planting ground, where they may be taken out one at a time as they are needed without any exposure whatever.

Stamping the Soil Firmly About the Roots Most Important Of All Sift in fine, moist dirt among the roots, just enough so that the boot will not injure them, then with the heel and all the strength and weight at command, stamp the earth until it is solid. Fill in a little more dirt and repeat the stamping until the hole is nearly full, finishing with loose dirt, but leaving the tree standing in a sort of valley to catch the water and insure its settling down to the roots. A tree thus firmly set cannot be pulled up without breaking the roots, and this general rule applies to everything from a strawberry plant to a shade tree. We prefer this way of setting to the use of water, as in that case it is impossible to pack dirt so solid about the roots.

Soil Should Be Left Sloping Toward the Tree. If trees must be planted in the grass, holes as large around as a wagon wheel and 18 inches deep should be dug for each tree, and as the planting is finished the ground should be left sloping toward the tree for some three feet in all directions so as to catch and turn towards it all the water that falls in its vicinity. When the planting is finished, a mulch six inches deep of straw or coarse manure should be spread about the tree for a distance of at least three feet from its stem to keep the ground moist and the grass and weeds from growing near it.

**Cutting Back
Should Not Be
Neglected.**

When the trees and bushes are planted they should be carefully pruned by removing all unnecessary branches and about half the growth of the previous season. This is very important in order to preserve a balance between the root and the top, and in the case of most bushes should be done so thoroughly as to leave but little above the surface. Large shade trees should have nearly all their branches removed, leaving little if anything but their naked stems. If the lower two-thirds of their stems are wrapped with strips of burlap or hay rope as soon as set it will go far in saving their vitality and in protecting their trunks from sun-scald. Such wrapping may be profitably maintained for several years until the trees have begun to make a vigorous growth. The foregoing directions for pruning do not apply to evergreens.

**What to
Plant.**

It is the aim of the following pages to assist the planter in choosing the varieties best suited to his taste and condition. Those

living north of the latitude of St. Paul will find hardiness or ability to resist cold one of the most important considerations in making a selection. To aid in this matter we have marked such varieties of trees and plants as are especially adapted to severe conditions with a *. There is much controversy as to the best sized tree to plant, some contending that a small tree is better and safer than a large one, and others arguing for the larger sizes. We have succeeded with all sizes, and think good care and cultivation are of vastly more importance than the size of the tree used for planting. In evergreens, nothing is gained by planting trees over three feet, and the best size is usually about 18 to 24 inches.

APPLES

**One Manitoba
Orchard Pro-
duced 100 Bbls.
of Apples in
1909.**

The fact that the southern portion of Minnesota produces a surplus of summer and fall apples, as many as 117 carloads being shipped out of Fillmore county in one season, and that there are many good orchards as far north as the latitude of Duluth, and that

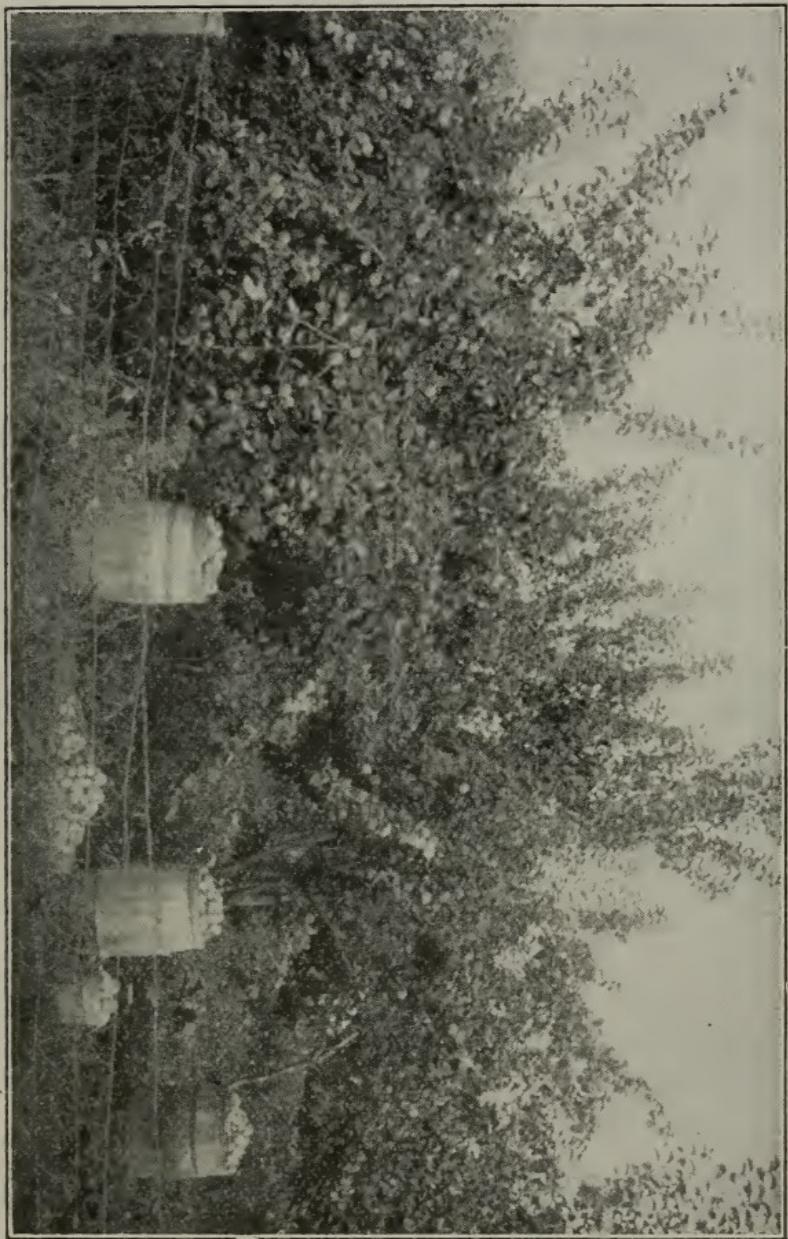
Mr. Stephenson of Dunstan, Manitoba, 18 miles north of North Dakota, and within 30 miles of the Red River, has grown 300 barrels of apples within the past few years, should encourage every lover of a good home orchard to make a trial of the hardier varieties and the improved northern methods that have been developed within the past ten or twenty years. That there have been many failures in the past must be acknowledged. It is also true that there will be many in the future by those who fail to realize that they cannot succeed with the old Eastern and Southern varieties and methods, or with an orchard given up to grass and weeds, rabbits and live stock. But intelligent business sense and good care will now bring success in all the northern states as surely as in any other branch of agriculture; indeed, for years past there have been no acres in our section of Minnesota that have made as large a NET profit as the acres planted to apple orchards.

**Varieties for
the Home and
Commercial
Orchard.**

Those herein listed are so faithfully described that the most ignorant planter need not go astray. It is substantially the list recommended by the State Horticultural Society and at the Farmers' Institutes. They are all useful in the home orchard where

it is best to have an assortment of varieties to suit the tastes of the family and to cover the whole year. For commercial planting it is best to put out but few kinds, it being easier to market a large quantity of fruit of one well known variety

A. P. STEPHENSON'S ORCHARD, NELSON, MANITOBA, PRODUCING 100 BARRELS IN 1909



than to find a buyer for a mixed lot of apples. The best kinds to grow for market are doubtless found in the list for commercial planting recommended by the Minnesota Horticultural Society, which is given on page 4.

**A System of
Planting With
Many
Advantages.**

We wish to call attention to a system of planting that is especially adapted to meet the needs of our northern climate and is being adopted more and more each year. It is so fully illustrated on page 13 that we will only call attention to some of its advantages.

The wide space between the rows gives an abundance of room for raising a crop of corn, beans or potatoes in a convenient and profitable way, the cultivation of which crop will nearly complete the cultivation of the orchard upon which its health and thrift so largely depends. A large orchard may be planted in this way without feeling the loss of the land which it occupies or the time required for its cultivation, until the trees themselves begin to make a return for the land and labor devoted to them. As the orchard comes into bearing this wide space becomes very useful in giving room for the operations of spraying, manuring, harvesting, etc., as well as affording a free circulation of air and an abundance of sunshine, both of which are very necessary to the proper ripening of the fruit.

**Pruning Should
Be Attended to
in Good Season.** As before suggested, some cutting back should be done at planting time. We try so far as possible to preserve a central stem with limbs from it at proper intervals. As the tree grows such branches as appear where they will be likely to chafe the main limbs as they develop, should be removed before they become larger than

A Northern Plan for Setting an Orchard

NORTH



30 to 35 feet



30 to 35 feet

12 to 16 feet

Currents between the trees

Beans

Sweet Corn

Potatoes

Gooseberries between the trees

Raspberries between the trees

Vegetable Garden

SOUTH

a lead pencil. Such light pruning may be done at almost any time and is seldom or never injurious, but heavy pruning to accomplish this object on trees that have been neglected should be undertaken with great caution. April and early May before the foliage comes out is the best time to do severe pruning. The cuts should be made at the collar, the wounds should be covered with thick paint, and at least three seasons should be taken to get the trees back in correct shape.

**Sunscald May
Be Prevented.**

Anything that will shade the trunk or larger branches will prevent this very common injury. It should be put on when the trees are set and maintained until the tree is shaded by its own branches. We are using a thin veneer of wood sawed about 12 by 24 inches and about 1-10 inch thick, which is also proving an excellent protection from rabbits and borers. A heavy wire screen that will protect from both sunscald, mice and rabbits and lasts a lifetime may also be had for about 8 cents. A cheap life insurance for a fruit tree.

**Blight Should
Be Cut Out.**

It has recently been discovered that blight may be very effectively controlled by cutting out the blighting twigs as fast as they appear. The cut should be made well below all the affected parts and the knife should be sterilized by dipping it in a five per cent solution of carbolic acid after cutting off each twig, so that the disease may not be carried from one limb to the other. This work must be done as soon as the disease appears and carried out persistently. It is also important that neighboring orchards be looked after or the disease will be continually carried back to the orchard and the work prove unavailing. Birds, bees and other insects are the common carriers of the disease.

**Crooked Trees
May Prove the
Best
in Orchard**

There is an unfortunate prejudice against crooked apple trees; as a rule, the varieties that grow crooked in a nursery make the best orchard trees, as they are always the spreading growers that shade their own stems, and are not so liable to split down when loaded with fruit. It is not at all necessary that a first-class tree should be straight and prettily branched. Some of the best varieties never grow that way, but are always crooked and gnarly in the nursery. Some nurseries will not grow such varieties at all, as it costs more to raise them, and the ignorant customer is almost sure to complain of them when they are delivered. The Hibernal and Patten's Greening apples and Early Strawberry crab seldom make pretty trees, and should never be ordered by those who care more for a straight tree than they do for a hardy and valuable fruit.

Season of Keeping of the Apple List. In the descriptions below we give the time that the fruit may be expected to keep, with careful, intelligent care, in the house cellar. With careless handling and in a commercial way they will not be fit for use for

near so long a season. Never put the fall and early winter varieties in the cellar immediately after picking; they will keep far better in open boxes or barrels in a cool shed until the approach of freezing weather. It is especially important to observe this rule with the Hibernal and Patten's Greening.

**A Select List
of Varieties
Described.**

We have not thought it worth while to describe a long list of varieties. It doesn't pay to plant them. It is indeed one of the common mistakes to plant a little of everything and not enough of any one of the real good serviceable things. We have had hundreds of fruits and ornamental trees on trial, and in the following list endeavor to give our readers the benefit of our long and expensive

experience. In introducing them to our readers and urging their merits we feel sure that we are saving our northern planters a great deal of expense and disappointment.

Varieties of extreme hardiness marked *.

Lowland Raspberry. Moderately hardy, free from blight, very handsome, medium upright grower, moderately early and fair bearer. Fruit medium size, beautifully shaded and spotted, mild acidity, generally agreed to be the finest dessert, fruit among the early apples, and on this account deserves a place in every home orchard. Its season of ripening is remarkably long, some specimens ripening nearly a week before the Duchess, and a considerable quantity are generally left on the tree after the Duchess is gone. A most popular variety with all who have tried it. Season, August.

Duchess.* Extremely hardy and free from blight, slow upright grower, medium early and very prolific bearer. Fruit large, handsomely striped, quite acid, fine for cooking even when half grown. This variety has been more largely planted and is more generally successful than any other early apple in the north. Keeps quite well in cold storage, but for this purpose or for shipping should be picked before becoming soft or fully ripe, which will usually make quite a saving in the fruit, as when the crop is left to fully ripen a good share of it is likely to be blown off. Season, September.

Iowa Beauty. Hardy, reasonably free from blight, strong, very upright grower, moderately early and good bearer. Fruit large to very large, handsomely striped, of fine quality and appearance. In season it follows immediately after the Duchess. Season, September.

Okabena. Extremely hardy, free from blight, fine spreading grower, early and very prolific bearer. Fruit large, hand-

somely striped, acid, resembling the Duchess so closely that it can be sold for that variety on the market, and as it keeps at least a month longer it serves to prolong the season of that popular fruit. Originated at the home of Mr. H. J. Ludlow, Worthington, Minn. Season, September.

Hibernal.* The hardiest apple known, blights but little, a thrifty, spreading grower, very early and abundant bearer. Trees set but five years have borne with us a bushel each. Fruit large, rather irregular in form, handsomely striped, excellent for cooking and superior for pies, but pretty sour and somewhat astringent for eating. Not a good market variety, but of great value on account of its rugged iron-clad nature, which fits it for planting even up in Manitoba. Also one of the best of all trees to top work with the more tender sorts, and is being largely used for that purpose. By planting the Hibernal, and after about three years topworking the trees to winter sorts, choice kinds like Golden Russet, Windsor, Salome and Fameuse can be grown successfully up to the latitude of St. Paul. Season, September to November.

Patten's Greening.* .Extremely hardy, free from blight even when planted among blighting kinds, a vigorous spreading grower, early and heavy bearer. Fruit very large, green when picked from the tree but changing to a beautiful yellow color in the cellar, a fairly good eating and superior cooking apple. One of the best showings that we have ever had in our orchards was a six-year-old tree of this variety that bore a barrel of apples. The most salable and profitable kind in our orchard thus far, selling well even when apples are plentiful. Season, September to December.

University.* Extremely hardy, very free from blight and sunscald, vigorous medium spreading grower, strongly branched, bearing heavily. Fruit large yellow faintly blushed, one

of the most attractive of show apples, quality somewhat better than the Patten. Safe to plant in severe locations. Season September to December.

Wealthy. Moderately hardy, subject to blight, and especially to sunscald, a strong upright grower, early and heavy bearer. Fruit medium to large, nearly covered with a beautiful waxy red. No apple can be found on our market that is equal in quality to the Wealthy as grown in Minnesota. This variety originated at Excelsior, Minn., over forty years ago, and, although it has killed back some in our severest winters, is today the most generally popular and profitable apple grown in the north. Season, September to January.

Anism.* Moderately hardy, remarkably free from blight, thrifty, upright grower, with fine, well-shouldered branches and an immense bearer. Fruit below medium size, skin somewhat rough but of richest red color, and good quality. For several seasons past this variety has made the handsomest show of any variety in our orchard and has just been placed on the list of varieties for commercial planting by the Minnesota State Horticultural Society. Season, September to January.

Malinda. Moderately hardy, free from blight, a thrifty spreading crab-like grower, very tardy but heavy bearer when it attains age. Fruit medium size, when fully ripe of a beautiful yellow frequently blushed, what is called sheep nose shape, mild acid nearly sweet, very much liked by most people in the spring when it becomes mellow and fully ripe. This variety should only be grown as a top-work as it then gets into bearing early and is very satisfactory. Season, October to April.

Salome. Fairly hardy, seldom blights, slow medium upright grower, early and full bearer. Fruit medium size, shaded and striped a bright red, quality juicy, sprightly and generally popular. This variety is making a place for itself very rapidly in southern Minnesota, and is doubtless one of the best of the long keeping apples to grow by top-working. Season, October to May.

PERKINS SEEDLINGS

For years past the great need of the north has been varieties of winter apples that would extend beyond the season of the Wealthy. Many bright and enthusiastic men have been working on the problem, and premiums as large as \$1,000.00 have been offered for the desired variety. The man who has come nearest to solving the knotty problem is Mr. T. E. Perkins of Red Wing, Minnesota. But, as in most of the important achievements in the world, there was "a woman in the case."

In the spring of 1893, while paring some fine Malinda apples from their own orchard, Mrs. Perkins discovered that some of the seeds had begun to sprout, and suggested to her husband that it might be a good plan to plant them. And so it was agreed that if she would save and sow the seed, Mr. Perkins would take care of the trees and finally plant them in the orchard.

In this way an orchard of 150 trees was started, which has now become famous. Selections from the fruit have for the past eleven years swept the boards at the state fairs and taken the highest premiums at the meetings of the State Horticultural Society. But, best of all, an exhibit made from this orchard at the meeting of the American Pomological Society in Boston took the Wilder Medal, the highest award given in competition with the whole United States.

The Malinda, the mother tree of the lot, has strongly impressed two most important qualities upon its offspring—long keeping, and the disposition to hang to the trees till fully ripe. The surprising thing, however, is the large number of high-colored apples of good quality that were evidently produced by a favorable cross.

In 1908, six years ago, a selection was made from this orchard and the propagation of several of the best varieties begun. Of these we describe two of the most promising.

Redwing. Extremely hardy and free from blight, having stood four winters in Manitoba. One of the thriftiest of orchard trees, with rich, clean foliage. Inclined to upright habit in the nursery, but somewhat more spreading than the Wealthy in the orchard. Branches heavily shouldered so that



REDWING

they never split down. An early and one of the heaviest bearers that we have ever seen. In 1913 when only twenty years from seed the original tree carried a crop of $27\frac{1}{2}$ bushels by actual measure. Fruit medium to large, samples sometimes measuring 13 inches in circumference, beautifully strip-

ed and splashed with red, one of the handsomest of apples. Hangs tight to the tree till ready to pick. Flesh firm, fine grained and remarkably juicy, much like the Northern Spy. A fine, crisp, tart, eating apple and one that in pies cooks up with the crust. Promises to fill the long felt want of a winter apple that is entirely hardy in the north. Season, October to April.

- Goodhue. Hardy and as yet showing no blight. A strong spreading grower, fairly early and good bearer. Fruit very large, equal in this respect to the Wolf River, and like that famous variety one of the handsomest of apples. Quality very



Wilder Medal won by Perkins Seedlings at the American Pomological Society Exhibition at Boston in 1903 in competition with all North America.



Gold Medal won by Perkins Seedlings at the Louisiana Purchase Worlds Fair at St. Louis in 1903 in competition with all comers.

much like the Wealthy, so much so that before it was named it was known as the variety that was "like Wealthy." Its magnificent size, rich red color and delicious quality seems to assure it a place in the home orchard and a reputation on the market. The great weakness of the Wealthy is its habit of dropping from the tree before it has attained its full color and quality. The Goodhue hangs until the fruit has become perfected in color and flavor and is ready for the barrel. As a

variety it is so much superior to the old kinds like the Okabena, Iowa Beauty, and Patten as to make them obsolete. Season, October to January and perhaps later.

SOUR, SUITABLE FOR COOKING

Transcendant.* Extra hardy, a thrifty spreading grower, fairly early and immense bearer. Fruit too well known to need description. Ripens in September, Perishable.

Success. Hardy, and very free from blight. A strong, upright grower, early and full bearer. Fruit the size, color and shape of the Hyslop, but unlike that old favorite does not become mealy. It ripens late, remains juicy and keeps for several weeks, making it one of the most promising of all varieties to grow for the market. Good, sour crabs are becoming scarce and bring a good price and filling the want so perfectly the Success should be one of the most profitable things to plant.

SUITABLE FOR DESSERT

Early Strawberry.* Hardy, a thrifty, spreading grower, early and heavy bearer. Fruit size of Transcendant, highly colored, ripens about September 1st; of tender, delicious quality, too perishable for market but a fine little eating apple for family use.

Whitney.* Hardy and doing well everywhere, of very handsome, upright growth. As a bearer, varying much with soil and care, but generally satisfactory. Fruit very large for a crab, handsomely striped and far superior to the Duchess as an eating apple. The most popular of all the small dessert apples. Ripens in September. Perishable.

PLUMS

There is no fruit likely to give such genuine satisfaction as our improved plums; they are literally "as hardy as an oak," begin to bear very soon after planting, bear only too abundant-

ly, and finally the fruit, either for dessert or canning, will rival in excellence the product of any garden on earth. No farm or village home even in North Dakota or Montana need be without this luscious fruit, which is more easily raised in our climate than peaches in New Jersey.

The plum seems to like a reasonably moist, rich soil. The trees should be planted in orchard sixteen by twenty feet apart. The heads formed about three feet from the ground. Rank top-heavy growths in young trees should be clipped back before they break down, and all pruning done before the branches have grown beyond the lead pencil size. The orchard should be kept free from grass and sprouts and liberally mulched, manured and cultivated. The plum requires so little room that it is especially adapted to village lots, where its fragrant blossoms and refreshing fruit will be greatly enjoyed. One of the principal difficulties in raising the plum is the habit the trees have of setting too much fruit, sometimes almost more plums than leaves, in which case it is necessary to shake off half or three-fourths of the fruit when the size of cherries. If this is neglected the fruit will be small and inferior, and the trees will not bear the next season. Southern and Eastern nurserymen commonly propagate the plum on the peach and tender imported stocks which render their trees entirely unsuited for northern planting. The native plum which is commonly used by northern nurserymen is the only stock that will insure a long-lived and profitable orchard tree.

THE OLD LIST.

Desoto.* Discovered growing wild near the little town of De Soto, Wis. One of the first of such varieties to be taken up and propagated. It possesses most of the splendid qualities of the best natives, and is still very popular with planters. Tree spreading, very hardy, inclined to over-bear. Fruit of good size, mottled red. Flesh peach-like and delicious. Skin thick and astringent.

Forest Garden. The earliest of the old varieties. Fruit light red, of medium size, sweet and rich, but too soft to carry to market.

Wolf.* A fine plum, ripening about the same time as the DeSoto, but differing in quality, and resisting drouth perhaps the best of all the old varieties. A good, large, red, free-stone plum.

Wyant.* A choice variety, that with us has proved a more reliable bearer of large, smooth, perfect fruit than any other of the old list. Flesh very firm and easily separated from the pit. Ripens a few days before DeSoto.

Terry.* By far the largest plum of the old list. Tree very hardy and doing well in North Dakota. Fruit red, quite firm, with considerable acidity, clingstone. Was first sent out under the name Free Silver.

Compass.* This remarkable fruit, the result of a cross between the sand cherry and a native plum, originated with H. Knudson of Springfield, Minn. The tree is perfectly hardy, even in the far north, and seems especially adapted to the western prairies, where it is very free from disease, and remarkably exempt from insect enemies and the depredations of birds. It frequently bears the same year it is set, and is quite certain to bear a good crop annually thereafter. The fruit, which is a small, bright red plum, is of pleasant acidity as eaten out of hand and when cooked or canned makes a remarkably fine, rich flavored sauce. Not especially desirable east of Minnesota.

NEWER VARIETIES.

Pattens XX. This is the first plum put out by Mr. Patten of Iowa, who has originated so many valuable varieties of apples. It is a cross between a native variety and the Burbank, one of the most popular of the western fruits found on our

markets. The strong points of this variety are its great productiveness and its fine cooking quality. Unlike the old line varieties, the skin cooks up tender without a trace of astringency, and the trees are loaded with fruit year after year. The tree is the most vigorous grower of all the plums we have tried, requiring special care in cutting back strong shoots that otherwise would break down in wind storms. Ripens with the Wyant.

Opata.* This and the following varieties are the product of crosses made between native and foreign varieties of stone fruits by Prof. Hansen of the South Dakota Agricultural Coll., and mark what we regard a great advance in our list of northern plums. The Opata is a cross between the native sand cherry and the Gold plum. Tree is a good spreading grower bearing heavy crops more continuously than any other variety we have ever planted. Fruit about the size of De Soto, commonly weighing about a half ounce each. Dark purplish red with blue bloom. Flesh green, fairly firm, quality excellent Ripens at least a week before any other plum, and on this account should be planted in every orchard. Perfectly hardy even in the Dakotas. In the autumn the foliage of the Opata colors up a rich bronze, and for a week or more renders the tree a most beautiful ornament.

Sapa.* A cross between the sand cherry and the Japanese plum Sultan. In style of tree, size, shape and color of fruit very similar to the Opata. But when ripe the flesh and juice is of a rich dark purple color and makes a sauce of superior excellence. Ripens about a week later than the Opata and is of equal hardiness. We have seen two-year nursery trees of this variety loaded with fruit like currant bushes, and bending to the ground with their weight.

Hanska.* A cross between the native plum and *Prunus Simoni*, the large firm-fleshed apricot-plum of China. Tree very hardy, a strong medium upright grower, an early and

full bearer. Fruit large size, bright red, and of a delicious apricot flavor. Fine to eat raw and cooks up without a trace of astringency. The fruit is firm enough to ship across the continent, the first real market plum possible for us to grow in the north.

— **Waneta.** This wonderful big new plum is the latest of Prof. Hansen's productions, and gives the northern orchardist his first opportunity to compete with California in growing large market plums. The following is Prof. Hansen's description: "My belief is that in this variety I have combined the best points of the native and Japanese plum. It is probably the largest of 10,000 seedlings. The size here at Brookings in 1912 was two inches in diameter, weight about two ounces. The female parent is the Apple Plum, a large Japanese variety. The male parent is the Terry, the largest of the native varieties." We regard this the most promising plum that has been offered to our northern planters since the settlement of the country.

CHERRIES

Cherries are beginning to come to the front in the north, and there seems to be no good reason why they should not, for they are grown in great quantities in Russia in a climate much colder than our own. The proper way to grow cherries in a severe climate is to train them as bushes rather than as trees, and year by year allow a few new sprouts to come up at the base of the older stems, and, as the latter become feeble or diseased, cut them out and allow the young ones to take their places. Set the trees very deep, fully a foot deeper than they stood in the nursery. Lay out the orchard in rows 25 feet apart, and set the trees 10 feet apart in the row.

Homer. The only variety of the true cherry that has been grown in quantity in Minnesota. Near the little village of Homer, where it was originated, it has been in cultivation for

over forty years, and has been grown and marketed in large quantities, and proved its superiority over all the common kinds that have been carefully tested by its side. So successful has this variety been in this locality that it seems worthy of trial in favorable localities south of the latitude of St. Paul. Of a little later season than Early Richmond, and of larger size and better quality; otherwise much resembling this standard variety.

GRAPES

Grape. This is a fruit that on almost any good corn land can be grown as well here as in Iowa and Missouri, with the only additional expense of covering in winter, and with the great advance that has been made by the introduction of the iron-clad Beta, even this trouble has been done away with.

Vines should be set in long rows for convenience of cultivation, 8 feet apart in the row, and rows also 8 feet apart. Plant deep. For a trellis use three plain wires put up like a fence, but a little higher. Dirt makes the best winter covering, but manure will do. It is necessary that grapes be planted in a warm, sunny situation and well cultivated. The art of pruning is best learned by spending a little time in the vineyard of your nearest grape grower.

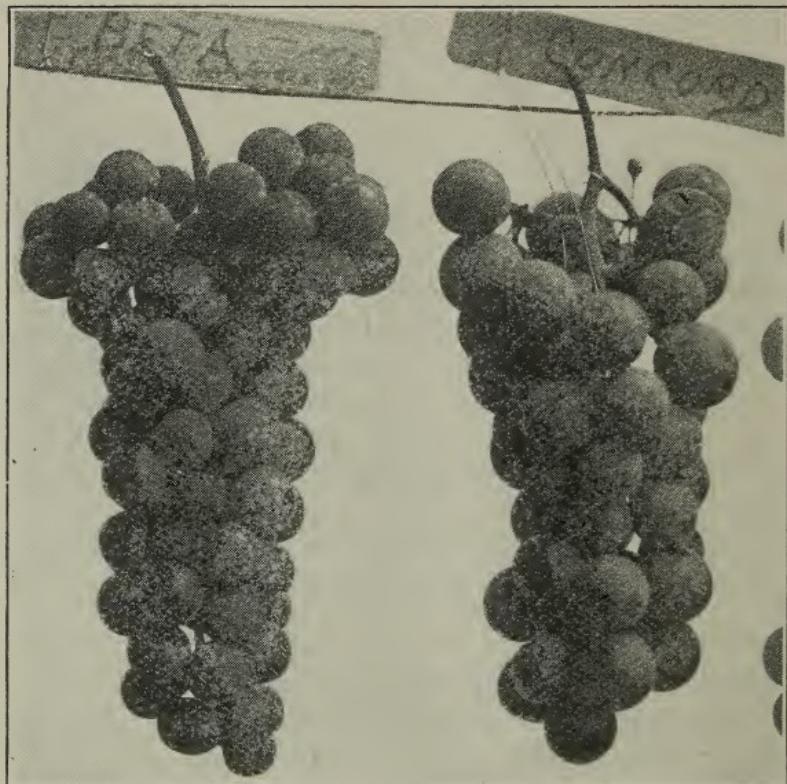
Moore's Early. A very large black grape of rich flavor and excellent quality. The standard early grape. It is very hardy, and free from disease, but does not bear as heavy nor is it as vigorous in growth as could be desired.

Brighton. A fine-flavored red grape that ripens reasonably early, and has the great advantage that with little trouble it can be stored in the cellar and kept about as well as apples.

Concord. Black, productive, rather late, quality the best.

Beta.* This new variety originated in Minnesota some years ago, and is proving the best all around grape for gen-

eral planting, as it will stand all our Minnesota winters without protection. A fine, black grape of a size midway between the Delaware and Concord, that ripens the first of all and is very prolific and healthy. The quality, while superior for sauce and jellies, is not the very best for eating from the hand, but even for this purpose it is far better and more wholesome



COMPARATIVE SIZE OF THE BETA AND CONCORD

much to bring it to public notice, had the following report of it in the Minnesota Horticulturist: "I am especially pleased with the Beta Grape as a variety for general planting, knowing than the grapes that are shipped to us from the east. Prof. Green, who had a long experience with the variety and did

as I do, its great hardiness. The bunches are all good sized and very often shouldered. The fruit is medium in size, quite acid, but of good quality. Some of our vines have borne as much as 45 lbs. in one season." We unhesitatingly recommend the general planting of this variety. It marks the beginning of successful grape culture in the north.

CURRENTS

A reliable and indispensable fruit for northern gardens, and one that at this time is one of the most profitable to grow for market. The rows should be laid out 6 feet apart and the plants 4 feet apart in the row. Good cultivation and two sprayings for worms, using paris green just as if poisoning potato bugs, is about all that is necessary to make sure of a crop of currants. The big market growers all use paris green, and we have done so for years, and no accident has ever been heard of. It is necessary to be watchful or the worms will have the bushes stripped before you know a thing about it.

Red Dutch.* The old standard red that is agreed to be about the best variety of the old list.

White Dutch.* A fine, sweet variety which we regard the best of the white kinds for general planting.

Perfection. A beautifully bright red variety with remarkably large sized berry and bunch, and unlike most of the large varieties, is getting a reputation as a heavy bearer. Currants over half an inch in diameter are commonly found among the bushes. The quality is excellent, a rich, mild acid, with plenty of pulp and few seeds. This variety is the product of a cross between the White Grape and the Fay Currant, and appears to mark a great advance in this fruit. We consider this one of the best of the new things that have come to light in the past few years, and would not think of planting any other red currant in our own garden.

GOOSEBERRIES

A greatly neglected fruit. Nothing makes a finer sauce for winter use. For the acme of all rich things, commend us to our mother's gooseberry pies. These, with the currant, and plum are ready to make themselves "at home" even in Manitoba, and require no more attention than in the best fruit regions of the east. Culture the same as for currants.

Houghton.* Pale red, a most hardy and reliable variety, extremely productive, and of excellent quality, but rather small.

Downing. The great market variety. Light green, sweet and fine, a much larger variety than the Houghton and hence easier to pick and prepare for cooking or market. Not quite as hardy as the Houghton.

Carrie.* Originated in Minnesota, by the late Wyman Elliot. Pale red, about midway in size between the Houghton and the Downing, excellent quality, marvelously productive. The bush is remarkably free from thorns making it the easiest of all varieties to pick. The strong point in this variety however lies in the superior health of its foliage which stands out green and beautiful when other varieties planted near it are browned and spotted with rust and mildew. For home use we now always recommend the Carrie.

Josselyn. This is perhaps the best of the large fruited varieties. Color, red, very healthy and productive. The nearest approach to the large European varieties of anything that will succeed in our western gardens.

RASPBERRIES

One of the most delicious and easily grown fruits. Should be planted in rows not less than 7 feet apart with the plants

3 feet apart in the row. There is little attention required, but to keep the space between the rows well cultivated, and hoe out such weeds as appear in the rows.

King.* A very prolific bearer of large, bright, red berries of good quality. A stronger grower than the Loudon and equally hardy. Canes very free from rust and remarkably healthy. A good berry for home use and the most popular of all among the market gardeners.

The red varieties like the King all send up sprouts or suckers abundantly. The common method of cultivating is to allow the plants to sprout in a thicket about 18 inches wide. All plants appearing outside these rows should be promptly treated as weeds. Many people object to suckering varieties, but as the suckers appear but once in a season and can be easily kept in check by the cultivation needed by the fruiting canes, and as they are among the hardiest and most delicious of all berries, we think them well worth planting in every garden.

Older.* Black, hardy and reliable. Fruit of large size, sweet and with the smallest proportion of seed to pulp of all the black caps we have ever tried. This is by far the most reliable fruiter of its class, and is also a berry of the choicest quality, a rare combination. Does not spread by suckering.

Columbian.* A very large, dark red or purple variety that is proving very popular all over the country. It is a first-class table fruit, and the best of all raspberries for canning. An exceedingly valuable berry for the home garden, as, like the black varieties, it does not sucker, and produces well in dry seasons when other kinds fail. We especially recommend it. In planting this and the black varieties, great care is necessary not to injure the bud in the center of the spreading fibrous roots, which is the center of life of the plant. If it be broken off or roughly trodden on the plant will likely fail to grow. It is also important in planting that this bud should not

be covered more than an inch or so, as it has not the strength or vigor to push up through much soil. Lack of precaution in these two matters is the cause of the loss of a large share of tip-rooting raspberry plants.

BLACKBERRIES

None of the small fruits yield more abundantly than this, if the trouble be taken to cover it in the winter. This is easily done by removing a spadeful of dirt from one side of the hill and bending the canes in the root to the ground, and holding them there by a slight covering of dirt. We are inclined to think the blackberry requires a sandy soil in order to be most highly profitable. Planting and care similar to the raspberry.

Eldorado. A variety of superior health and now regarded as one of the best for northern planting.

STRAWBERRIES

The first fruit of the season and the most popular of all. In our climate, should always be planted in early spring. Lay out the rows 4 feet apart, plants 1 to 2 feet apart in the row. Take care to plant just right, neither too deep nor too shallow. Shade each plant, if possible, with a shingle or bit of newspaper for a few days; this is especially important in late plantings. Pinch off all blossoms, and allow no fruit the first season. Don't plant in land that has been in grass or clover within three years, as the white grub infests such land and will be quite certain to destroy the plants. Do not allow the plants to mat too thickly in the row, but spread them out and make a row 2 feet wide. Hoe and cultivate quite often, killing the

weeds when they are small. As soon as the ground freezes mulch the bed with a sprinkling of clean straw put on thick enough to thoroughly hide the plants. In the spring a little of the finer mulch may be left on the plants to keep the berries out of the dirt, the rest should be raked into the path between the rows.

There are two classes of strawberries named after the character of their blossoms, perfect and imperfect. The former will bear if planted by themselves; the latter require a row of some perfect variety planted among them as often as every third row. The only varieties that we describe or recommend are the perfect-flowering. It would be good if all others were absolutely discarded

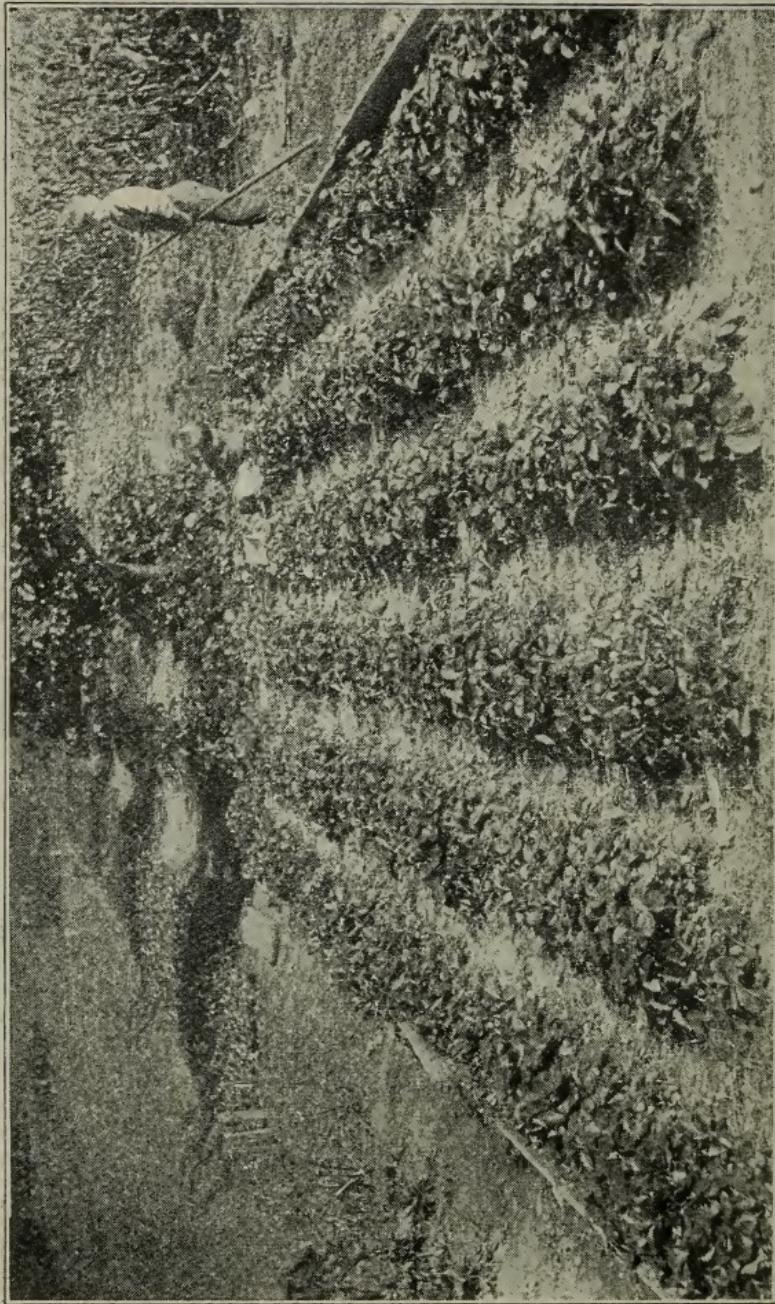
Lovett's Early.* One of the earliest. Berry large, bright red, conical, firm, of excellent flavor, productive. The plant is healthy and makes sufficient runners for a good matted row.

Bederwood.* An early berry, of fine size, round form, light red, of mild acidity, rather soft for shipment, but immensely productive.

Senator Dunlap.* A variety of medium season that has made a wonderful record all over this section. Of large size, round form, rich dark color, very firm, of fine quality, and the most satisfactory in productiveness of anything we have tried. If we could have but one variety of the June bearers it would certainly be the Senator Dunlap.

Brandywine.* Season late, of large size, fine round form, rich color, and exceedingly firm and solid, making a first-class shipping berry, and the very best in quality of all the June varieties we grow.

PHOTO OF BED TAKEN IN OCTOBER



EVERBEARING STRAWBERRIES

For some time past we have been recommending the new everbearing strawberries as a fruit for the family garden without knowing exactly what they would yield. This spring we determined to find out by actual trial just what they might be expected to bear the same season they were set.

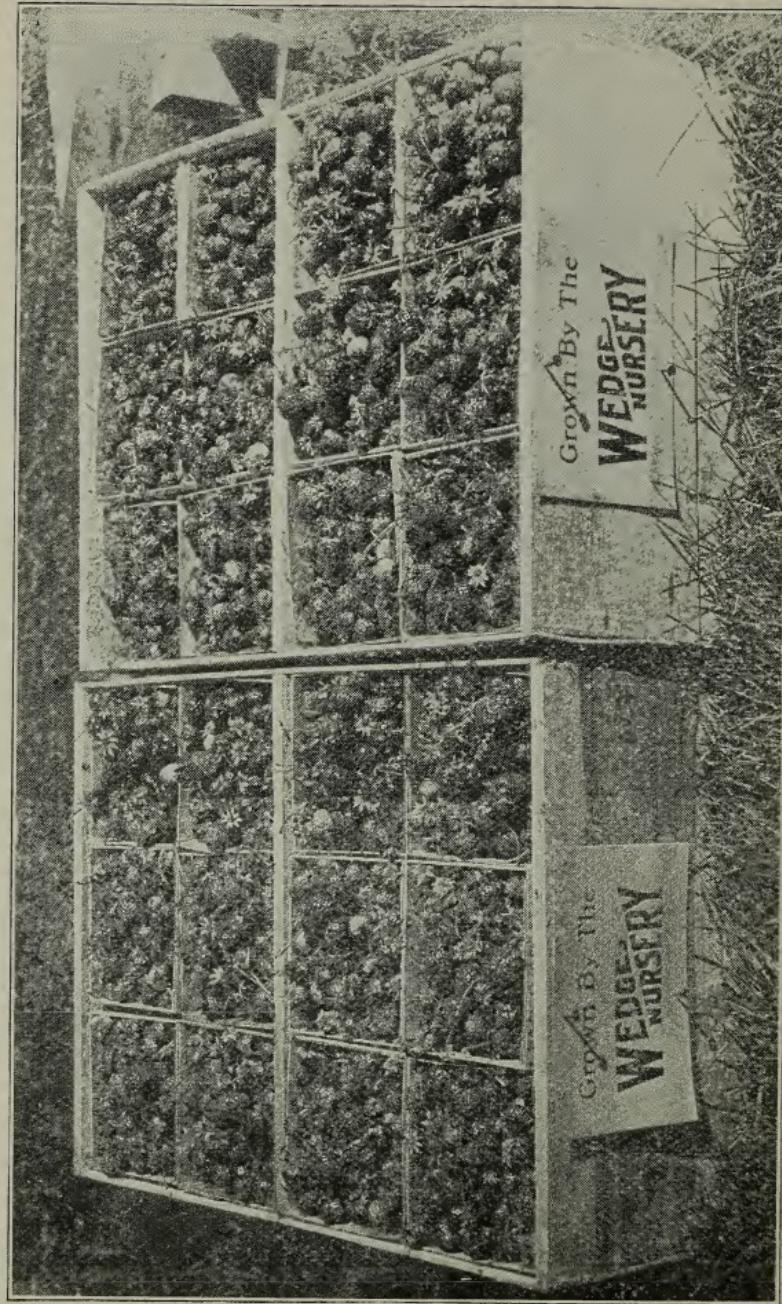
On the first of May we put out in our back yard one square rod, carefully measured, of the Progressive, setting the plants in rows twenty inches apart, ten inches apart in the row. The bed was kept clean and the runners and blossoms cut. About the first of July we mulched the ground between the rows with lawn clippings, which kept down the weeds for the rest of the season. The tenth of July we stopped cutting the blossoms, and the strength going to the fruit, from then on we had little work with the runners. In the midst of the fierce drouth of July we watered the bed thoroughly about five times. This sums up the care and time put into the bed.

On July 23rd, eighty-three days after setting, we began to pick berries. Every picking was carefully weighed and recorded at the time, with the following results: July 56 oz.; August 432 oz.; September 444 oz.; October 413 oz.

Eighteen ounces make a quart, dry measure. The total picking for the ninety days thus amounted to 74 3-4 quarts, or something over two and one third bushels of fruit, an average of five-sixths of a quart per day.

This means an average family supply of the choicest of all fruits one meal a day from the last of July till freezing weather, and the plants as healthy and promising for a crop next June as any of the good old standard kinds. Is there any other fruit or vegetable that will compare with it? Strawberries of the old line varieties bring returns fourteen months from planting, require a large outlay in mulching, and run chances of serious injury over winter. Raspberries bring their first crop in two years, and grapes three years from

CRATE OF EVERBEARERS READY FOR MARKET



planting. Only such early garden vegetables as lettuce and radishes bring returns within eighty-three days.

Some years ago we made just such an experiment with the best of our June varieties putting an equal amount of time into the cultivation, besides mulching over winter, and with a favorable season and good crop, picked thirty-two quarts fourteen months after planting. We considered that a fine yield, and for years afterwards mentioned it as an encouragement in strawberry culture. But what shall be said about more than double that yield and within eighty-three days from planting?

What about every family in the North having such a bed in their back yard? Could any ornament be prettier, or any planting more attractive? Is there anything that could be put on the family table that would add more pleasure than a dish of fresh, ripe strawberries picked from the home garden every day for three months of summer?

Progressive.* This is the variety used in the above experiment. There seems to be a very general agreement that this is the best of the kinds. Supt. Haralson of the state fruit breeding farm, no doubt the best and most impartial authority in the state, reported as follows to the Minnesota Horticultural society. "Among the everbearing strawberries introduced the last few years, the Progressive is the most satisfactory with us. It will give a good account of itself if planted on a good piece of land and good care given. These strawberries bear their main crop in the fall, the same year set out."

EVERGREENS

Evergreens are rapidly coming into popularity for both ornament and shelter. They are a little more expensive than the deciduous trees, and require somewhat more care in transplanting, but when the right kinds are planted and they are given intelligent care, they are the most useful of all trees

in our northern climate, as they hold their foliage during long, windy, cheerless winters, when they are needed to break the force of storms and relieve the monotonous gray of the landscape. And there is absolutely no excuse for leaving our farm homes without the winter cheer of their warmth and beauty. Small transplanted trees set in any good corn land and cultivated with horse and hoe as a corn field, will grow rapidly. They will not thrive in grass or weeds any better than corn. Our own wind break is planted in double rows, 8 feet apart, trees 4 feet apart in the row. If planting again we would place the rows further apart. The only secret in handling evergreens is to keep the roots moist every second from the time they are out of the ground until they are planted again. In setting, be careful to pack dirt about the roots with exceeding firmness, or the swaying of the tops in the wind will loosen their hold on the soil. The surface should, of course, be left loose and open as a dust mulch.

The following plain and important directions for setting wind-break evergreens, we insert here for the benefit of beginners:

TEN RULES FOR SETTING EVERGREENS.

1st. Take the trees from the delivery and as soon as you get home put them in your house cellar, without opening the package.

2d. As soon as possible mark or stake out the place for the trees in land prepared as for crop of corn.

3d. Prepare a large pail or tub half full of mud about the thickness of common paint. Take it to the cellar, unpack the trees and place them in the pail with their roots in the mud.

4th. Keeping their roots in the mud, take the pail of trees to the place marked for them and begin setting them one at a time, a little deeper than they stood in the nursery, and as fast as the holes are dug.

5th. Do not use water in setting, but throw in fine moist dirt next to the roots and pack the dirt solid as you fill the hole, leaving only one inch or two of loose dirt on top.

6th. Cultivate the ground all summer, keeping it clean and mellow, just like a good corn field, or if single trees set in your yard, keep a space 8 feet across mellow and free from grass and weeds.

7th. Use no manure. We have set evergreens in banks of clean sand and beds of pure clay with perfect success.

8th. It is better to depend upon clean and regular cultivation than to use water.

9th. Chickens won't hurt them, but other stock must be kept away.

10th. BEWARE! If the roots of evergreens are exposed to the sun and air for a minute or two, they are likely to die.

Scotch Pine.* Grows fast and resists drouth; makes one of the cheapest and quickest windbreaks of all evergreens, and should be planted largely all over the prairie regions. It is just as easy to make live as a box elder, if the trees are handled according to the rules above given. Like all pines, when it gets to be old it is inclined to lose its lower branches, and the windbreak would be improved by planting a row of white spruce by the side of it ten years after the pines are set.

Norway Spruce. This is the tree that is so generally planted; it grows fast, and makes a fine windbreak on soils that are not too dry. We do not recommend its planting west of Albert Lea, as it is inclined to brown and fail in drouth, especially if planted in exposed situations.

White Spruce.* A most beautiful tree for the lawn; grows a little more slowly than the Norway, but every inch of it is a bright, vivid green. It is easy to make live, and resists drouth wonderfully. The best type of this tree for general

planting comes from northern Minnesota and Wisconsin. The Black Hills form which is generally agreed to be the hardiest and most beautiful is also greatly sought after, although much slower in growth than the type above mentioned.

Arbor Vitae. A fine tree, when sheared; very pretty for hedges and screens. Succeeds well in certain locations, but no evergreen suffers more from drouth. Should only be planted in moist soils and sheltered places.

Balsam Fir. A favorite with many; very regular and handsome as a young tree, but somewhat unreliable as it reaches maturity. This, with the Norway Spruce, White Pine, and even the Arbor Vitae, make very good trees east of Albert Lea, but are not so good as others for the western prairies.

Blue Spruce.* This is the queen of ornamental evergreens, and seems especially adapted to the climate of the North Mississippi Valley from the lakes to the mountains, and even far up in Manitoba. In all the time that we have had it at our place it has never shown an injury from winter's cold or summer's drouth. The color of the foliage of this tree varies from a light, silvery green to as dark a shade as that of the Norway Spruce. The light shades are by far the most rare and valuable, and shine out on the lawn as if frosted with silver. The trees of the selected light shades are called "Shiners"—and are much higher priced than the common blue spruce, although no harder or handsomer trees. When delivered in the spring all look alike, and it takes a year or two after transplanting for the "Shiners" to get back their silvery plumage.

Concolor. One of the beauties from the Rocky Mountains that can be enjoyed by those who are able to plant it in a somewhat sheltered situation. It is as interesting and showy as the best specimens of the blue spruce, but lacks its rugged

hardihood when planted in the open. A tree that deserves a much more general planting.

Bull Pine (Ponderosa).* This is the wonderful tree that five years ago we found growing on the tops of the buttes in the Bad Lands of western North Dakota near the old Roosevelt ranch. The hardiest deciduous trees like the ash and cot-



WINDBREAK OF BULL PINE

tonwood on the western plains always hug the water courses. But this rugged tree scorning protection or moisture crowns the highest ridges and bidding defiance to the harshest climate within the limits of our country, grows there to saw log size. Trees grown from seed gathered in this section afford the home makers of western Minnesota and the Dakotas

an evergreen that is fully able to withstand every hardship of their climate. There is an absolute certainty that it will make a good windbreak on any land dry enough for farm crops south of the Manitoba line. There is no longer an excuse for leaving a single home on the prairies unprotected.



HOME OF THE BULL PINE IN WESTERN NORTH DAKOTA

SHADE TREES

American, or White Elm.* The standard shade and street tree of America. Seems to be able to endure more hardship and abuse than even the oak, and is also one of the cleanest and freest from insect enemies of all of our native trees.

Linden.* One of the most reliable, hardy and drouth resisting shade trees on the whole list. Growth reasonably rapid, shade dense, blossoms exceedingly fragrant. Should have its trunk shaded for the first year or two after planting to prevent sunscald.

Ash.* The most reliable of all trees for the northwest Stands well where most other deciduous trees fail from drouth. Very little subject to the attack of insects or disease. A first-class lawn or street tree. Makes a steady, good growth, and should be planted far more than it is.

Box Elder.* Of very rapid growth, making a fine, dense shade in perhaps the shortest time of anything that can be planted. In order to get an immediate effect it is frequently desirable to use a share of this tree and the soft maple in connection with the better kinds mentioned above.

Soft Maple. A rank growing tree, suited to deep, moist soils. If trimmed so as to avoid making forks that split down in heavy winds, it becomes one of the most graceful and beautiful trees of our latitude.

Norway Maple. Very similar to our native sugar maple, but much more dense in foliage and enduring drouth far better. Trees planted thirty-five years are looking extremely well at Albert Lea, and are perhaps the most admired of all the shade trees in our city. Especially noticeable in the autumn when it holds its magnificent foliage nearly two weeks after every other tree has taken on a bare and wintry appearance.

European White Birch.*.. Very beautiful in winter or summer, with its white papery bark and finely divided spray, deserves a place on every lawn; makes a very pretty group when three or more are planted together.

Mountain Ash.* Perfectly hardy, bears large clusters of fragrant blossoms, which are followed by handsome red berries that frequently hang on all winter. It is somewhat inclined to sunscald, which may be prevented by planting a flowering shrub to shade the trunk.

Catalpa. A rapid growing tree with magnificent tropical foliage, and large, fragrant blossoms. Not so hardy as could be desired, but trees grown from a good strain, of Minnesota trees are likely to be far hardier than those sent out by the East and South. One or two specimens should be tried on every large lawn.

Bechtel's Double Flowering Crab. This we regard as the most valuable ornamental small tree that has lately been introduced. It is exactly like our native green fruited crab, and equally hardy and sweet scented, but the blossoms instead of being single are so double as to closely resemble little roses. So interesting and beautiful is this little tree that we would advise its planting by everyone. There is room for it even on a small town lot, where it would be far more in place than many of the larger growing trees that are commonly planted.

WEEPING TREES

Cut Leafed Weeping Birch. The most graceful and desirable weeping tree known. Perfectly hardy, but in dry seasons should have one thorough watering in the fall.

Wier's Cut Leafed Maple. A hardy and desirable silver maple, with delicately cut and divided foliage, and a form rivaling the beauty and grace of the weeping birch. One of the best trees of its class.

Niobe Weeping Willow. An interesting introduction from Russia brought over by Prof. Hansen of South Dakota. A

hardy tree with graceful, drooping golden twigs that is very desirable for park, lawn or cemetery decoration.

NUT TREES

Black Walnut. The most desirable of the nut-bearing trees for planting south of the latitude of St. Paul. Makes a fine lawn tree if the soil is not too dry, and is well worth planting for its most excellent nuts, which find a ready sale on the market.

Butternut. A much hardier tree than the black walnut, but very liable to sunscald unless sheltered on the south side. May be planted anywhere in Minnesota. Bears nuts very soon, usually within six years after planting.

FOREST TREE SEEDLINGS

For groves and windbreaks, should be planted 4 feet apart each way; by this close, even planting they are encouraged to make a straight growth, and the sooner shade the ground so as to require no cultivation. At about eight years they can be thinned to 8 feet apart; an acre thus planted requires 2,720 trees.

We wish to introduce here a word of remonstrance against the common practice of allowing timber plantations or old orchards to be pastured. No practice is more certainly destructive to their health and vigor. In our dry climate it is absolutely essential that the soil about our trees should be of a cool, moist, spongy character, which can only be maintained after cultivation ceases by allowing the natural leaves and underbrush to cover the soil, and keeping out stock of all kinds.

Ash.* The best of all trees for the dry western prairies. Does not quite keep up with the box elder as a young tree,

but after ten years will grow much faster. Thinnings make excellent fuel, strong and durable poles, and the older trees most valuable timber for many uses above ground.

Box Elder.* Very useful to mix with more valuable trees in timber planting, as it grows very fast while young, shades the ground quickly, and forces the slower trees to make a clean, straight stem.

White Elm.* Almost equal to the ash as a reliable tree for groves planted in dry soil. The above three kinds in about equal proportions, make a splendid mixture for a permanent timber lot, such mixed plantation doing better than those composed of one variety.

Soft Maple. Makes a strong growth for many years. Especially suited to moist soils, where it will make a large amount of good firewood in about the shortest time of all varieties.

Cottonwood.* A very fast growing tree and very popular. Usually healthy and long lived when planted in single rows, but in dry upland soils likely to die out when planted in groves.

Laurel Leafed Willow.* Perfectly hardy even in Manitoba, nearly as rapid a grower as the white willow, but unlike that valuable tree never injured by the willow worm. An occasional tree or branch is sometimes killed by a blight similar to that which affects the apple. There seems to be a constantly increasing demand for cuttings of this tree.

Russian Golden Willow. A very hardy and useful tree for windbreak and timber plantations. Of more spreading form than the white willow, and with its golden yellow twigs makes an interesting variety that is especially noticeable in winter. The Northern Pacific Ry., is using rows of this tree

to take the place of its expensive and troublesome snow-fences.

Norway Poplar.* A variety of the cottonwood family that has been called "The Sudden Saw Log," and seems to have come to light for the purpose of averting the lumber famine that threatens the country. It has the habit of keeping the larger share of its timber in the body of the tree rather than wasting it in branches, and thus maintains the size of the log well up into the top of the trees. The tree itself is so straight and tapers so gradually that we have seen logs 60 feet long that had a difference of but 10 inches in diameter between the butt and the top. Prof. S. B. Green, of the Minnesota Experiment Station, said: "It is the most rapid growing tree on our grounds." Although related to the cottonwoods, it does not shed cotton.

FRUIT BEARING SHRUBS

High Bush Cranberry.* Very similar to the Snowball in appearance, being ornamental in flower and exceedingly handsome when loaded with its coral red, drooping berries later in the season. Perfectly hardy and worthy of a place in the cool, moist soils in which it thrives.

Dwarf Juneberry.* A valuable fruit for planting in the western garden as it needs little care and attention, and fruits very abundantly in all seasons, even when the more commonly cultivated fruits like strawberry and raspberry fail from drouth. Dewain Cook, of Cottonwood county, says of it: "The dwarf Juneberry is perfectly hardy everywhere, even in the most exposed locations. The fruit is good, the bushes ornamental, and it is not known to be bothered with any insect or disease. Those who fail to plant it are missing a good thing."

FLOWERING SHRUBS

Spirea Van Houttei.* Frequently called the Bridal Wreath. This seems to come about as near perfection as any ornamental shrub that can be planted in the north. As hardy as the hazel brush, and sure to be loaded with a mass of white flowers in June of the year after planting. A graceful and attractive bush all the year. If you do not have this beautiful little shrub be sure to order it this season, even if you do not plant anything else. We never knew it to fail to delight anyone who planted it.

Spirea Anthony Waterer. A much smaller bush than the Van Houttei, but having the valuable habit of blooming nearly all summer. It is of a dull red color and very valuable for variety.

Hydrangea. (*Paniculata Grandiflora*).* A hardy outdoor Hydrangea that blossoms in August when flowers are scarce. Its immense blooms sometimes measure nearly a foot in length, and last at least two weeks; needs no protection, but in order to secure the finest blooms should be watered thoroughly about once a week as soon as it begins to bloom.

Hydrangea Arborescens. The latest addition to the summer flowering hardy shrubs, coming into bloom after all the earlier ones have passed away, and having the appearance of "hills of snow" in the middle of summer. A lawn having this fine shrub may be said to be strictly up to date. Especially suited to shady places.

Syringa.* A vigorous, handsome bush, bearing flowers with delicious orange blossom fragrance. Very ornamental. Sometimes makes a small tree as high as 20 feet.

Tartarean Honeysuckle.* A beautiful bush bearing a profusion of sweet scented blossoms early in June. Does well in shady situation. Two colors, pink and white.

Snowball. One of the old favorites that never can be displaced. Good, rich soil and an abundance of moisture will greatly improve the bloom and general appearance of the bush. If inclined to get lousy, douse the branches in a decoction of tobacco water.

Flowering Almond. A small shrub of medium hardiness that blooms profusely very early in the spring, when each twig has the appearance of being covered with a mass of little roses. Very useful as cut flowers.

Dogwood. One of the best shrubs for shady places, also doing well in full sunlight. Much used as an ornamental hedge. The branches turn to a brilliant blood-red on the approach of winter, making the plant very showy at that season.

Lilac.* Purple, White and Persian. These are the old fashioned shrubs that are familiar to all. The purple and Persian lilacs are excellent for low hedges and screens and should be planted in such quantities that their fragrant flowers may be gathered by the armful in their season. None of the lilacs will bloom freely unless growing in full sunlight.

New Double Lilacs.* Those who have never seen these new floral treasures can not realize what a new wealth of beauty has been developed in this old-fashioned shrub. Not only have the blossoms been made double, but the size of the heads has been enlarged till some of them are occasionally eleven inches long. And moreover they bloom as little things less than two feet high, instead of waiting till grown to be large bushes. This has all been done while retaining their perfect hardiness and the delightful fragrance of the old kinds. We have had some thirty named varieties on trial and recommend the following as the best of their color.

Madam Lemoine. Pure white.

Pres. Grevy. Light lilac.

Chas. Joly. Dark purple.

Belle de Nancy. Pink.

CLIMBING VINES

American Ivy.* A native of our state, perhaps the most hardy and desirable of any for covering porches or screens. Foilage turns a beautiful scarlet in the autumn. The self-clinging sort that will climb a brick or stone wall without the assistance of wires or other support is the most desirable.

Honeysuckle, Scarlet Trumpet.* The old garden favorite, blooms all summer, producing the most brilliant pendant coral flowers. Should be found about every home.

Clematis Jackmani. Bears a large, brilliant, purple flower. Requires winter protection and considerable petting. Like all the clematis it likes a shady situation. Very popular and desirable.

Clematis Paniculata. This new white clematis is proving the most valuable of the recent additions to our ornamental list. It is of a vigorous, rugged nature that succeeds where given a fair opportunity, and blooms in wonderful profusion in the latter part of the season. Will cover a porch, arbor or tree in a very short time.

ROSES

TENDER VARIETIES.

Nearly all the old line of roses require winter protection, a good covering of soil being about the best that can be given them. The first three varieties, if given good cultivation, will bloom almost continuously throughout the summer. The others in this tender list bloom profusely in June. While we

class these roses as tender, they are the hardiest and most satisfactory to be had, excepting the new Rugosas.

Gen. Jacqueminot. Dark red, double, fragrant. The most popular of its color.

Paul Neyron. Pink, very double and fragrant. The largest outdoor rose in cultivation; a magnificent variety.

Black Prince. (Prince Camille). Very dark, rich velvety crimson, passing to intense maroon, shaded black; large, full flowers, looking at a short distance as if really black; very handsome.

Harrison Yellow. A larger rose than the Persian Yellow, a freer bloomer, of a more agreeable fragrance and the more commonly planted of the two.

Queen of the Prairie. A climbing rose, bright rosy red, moderately double, very vigorous and healthy and a wonderfully profuse bloomer. The climbing rose that is so generally popular.

Dorothy Perkins. We think this the best of all the climbing roses for northern planting. We have it in both the pink and the white.

Crimson Rambler. We add this rose to our list on account of the exceeding brilliance of its effect, although it is not so hardy or easy to manage as the other climbers listed, and will need careful attention as to winter cover. Each separate rose is small, and with slight perfume, but blooming as they do in great crimson masses there is nothing in their season more showy.

Baby Ramblers. These are little dwarf roses of the easiest cultivation that bloom in the utmost profusion all summer. They have wintered perfectly with us for years past

by simply throwing a little straw over the plants on the approach of winter. Both white and crimson are grown.

NEW HARDY ROSES.

The new Hybrid Rugosa roses can be grown all over Minnesota without winter protection, and are without doubt the most important addition to the family of the "queen of flowers" that has come to our northern gardens. The old time roses are subject to diseased foliage in our summers, their roots are unequal to our severe winters, and their general constitution is so weak as to require the petting of an expert gardener. The new Rugosas are not built on any such weak and doubtful plan. Inheriting a robust constitution from an ancestry inured to the hardships of the frigid climate of northern Asia, they have received a sufficient infusion of the blood of the best of the older cultivated kinds to give them a variety of form and color which in combination with the magnificent foliage, delicate fragrance and habit of perpetual bloom of their Rugosa parent has fitted them to fill the long felt want of a hardy garden rose for the cold north. We strongly advise our patrons to secure not only one, but the complete collection, as each has peculiar merits which will delight all lovers of the rose, and which we of the north are at last privileged to enjoy to the full. In order to illustrate their freedom of bloom, even during the autumn months, we have had several photos taken on October 7th, four days before the great freeze in 1909. On the table with them will be seen fine bunches of the Beta. Ripe grapes and ripe roses at the same time.

Blanc de Coubert. Purest paper white, of large size, often four inches in diameter, semi-double, produced in clusters, exquisitely fragrant and with foliage of unrivaled richness. It is the first rose to bloom in the spring, and blossoms may be picked from it every day throughout the summer, and until cut off by severe freezes. We have had this variety twelve

years and never knew it to be injured by the severest winter. We hear of the beauty of rose hedges in California, and have long wished that our climate would permit us to enjoy such an out-of-door luxury, but we have never before had anything we could offer for this purpose to the people of the north,



BLANC DE COUBERT TAKEN WITH RIPE GRAPES OCT. 7, 1909

the old sorts being so tender and subject to disease. Now we have it. A rose with a foliage far ahead of anything California can boast, a strong grower, and with all the other good qualities, making a perfect low hedge full of bloom all summer.

Sir Thomas Lipton. Pure white, fragrant, smaller than the Blanc, and not quite so free a bloomer, but perfectly double and lasting better as a cut flower, much resembling the Madam Plantier in form of bloom.

Conrad F. Meyer. Clear, silvery pink, of largest size, almost as large as Paul Neyron, very double, choicest fragrance, continuous bloom, produced singly instead of in clusters as most of this class of roses grow. Bush thrifty and vigorous. An exceedingly choice rose, but considerably less hardy than the others of this group, and needing winter protection. While this superb rose is much the least hardy of its class it is much easier to grow than the best of the hybrid perpetuals is to which Gen. Jac. and Paul Neyron belong, and is equal to them in the qualities that make a first-class flower.

New Century. Rosy pink, shading to almost a red center, good size, fine fragrance, perfectly double, produced in clusters and exceedingly free blooming. A very interesting and distinct variety, and one of the hardest.

Hansa. Deep violet red, very large, perfectly double, fragrant. In this fine variety, unlike most of its class, the buds of each cluster open at about the same time, giving the effect at a distance of a single rose of immense size. The foliage is particularly dark, rich green and the bush absolutely hardy. A beauty every way. It is perhaps the best all around rose for general planting.

PEONIES

Peonies. We have in recent years spent large sums in order to secure the very choicest varieties of this, the most showy, fragrant and useful flower of our climate. The cultivation of the peony is the easiest possible, resembling the pie plant and asparagus of the vegetable garden. The root should

be planted so that the bud will be about three inches below the surface, at a distance of about two or three feet apart each way. In the list below we begin with white and pass regularly through the shades to the deepest red. A collection of these six varieties carefully planted in rich soil, and given good cultivation would create a sensation in any neighborhood. We describe nothing more hardy, beautiful and easily grown. No place is complete without a good collection of the different colors. It shuld be kept in mind, however, that although likely to give some beautiful blooms the year after planting, this flower does not arrive at its full size and form until the third year, and not even then unless given a very rich soil.

Festiva Maxima. Pure white, flecked here and there with crimson, fragrant, of largest size, specimens 7 inches across having been produced; blooms very freely and makes a magnificent bouquet, generally conceded to be the queen of peonies.

Marie Le moine. Ivory white, blooming later than all the others, and of particularly fine fragrance. This is a special favorite at the nursery, many being inclined to give it first place.

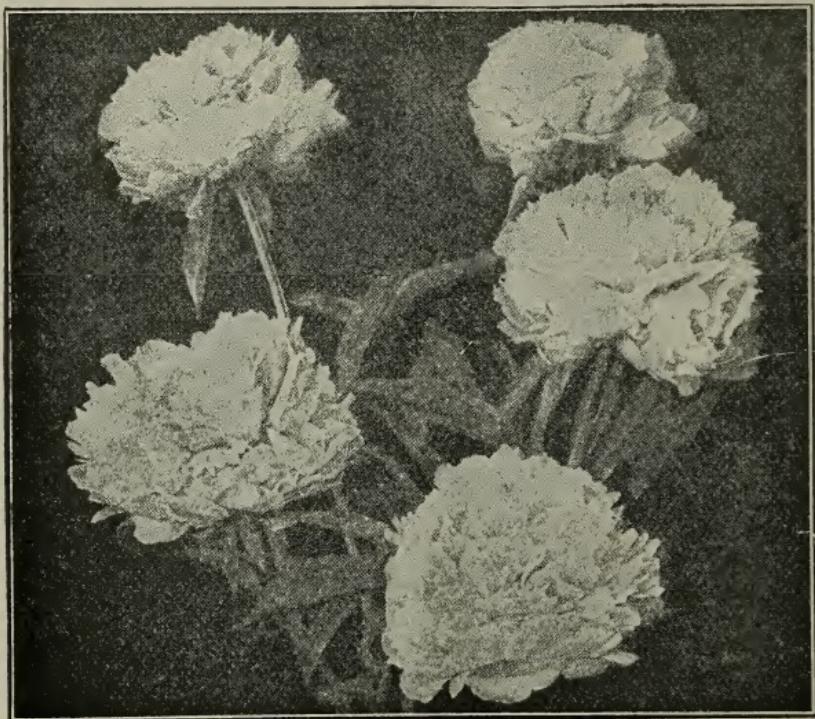
Achillea. Shell pink, fading to white, good size, fine form, blooming very early and freely. This is a particularly valuable kind, producing more flowers than almost any other we know.

L'Esperance. A very early flowering sort of exquisitely shaded, satiny pink, very fragrant, especially valuable in the northern states, as it is a strong, hardy, and robust plant Peony specialists put it on the "diamond list."

Grandiflora Rubra. Red, of medium season, and most magnificent size. The most striking variety in our list. Immense full flower, extremely solid and compact, so double

that when fully opened it has the form of a perfect globe. If there is anything grander, we have never seen it.

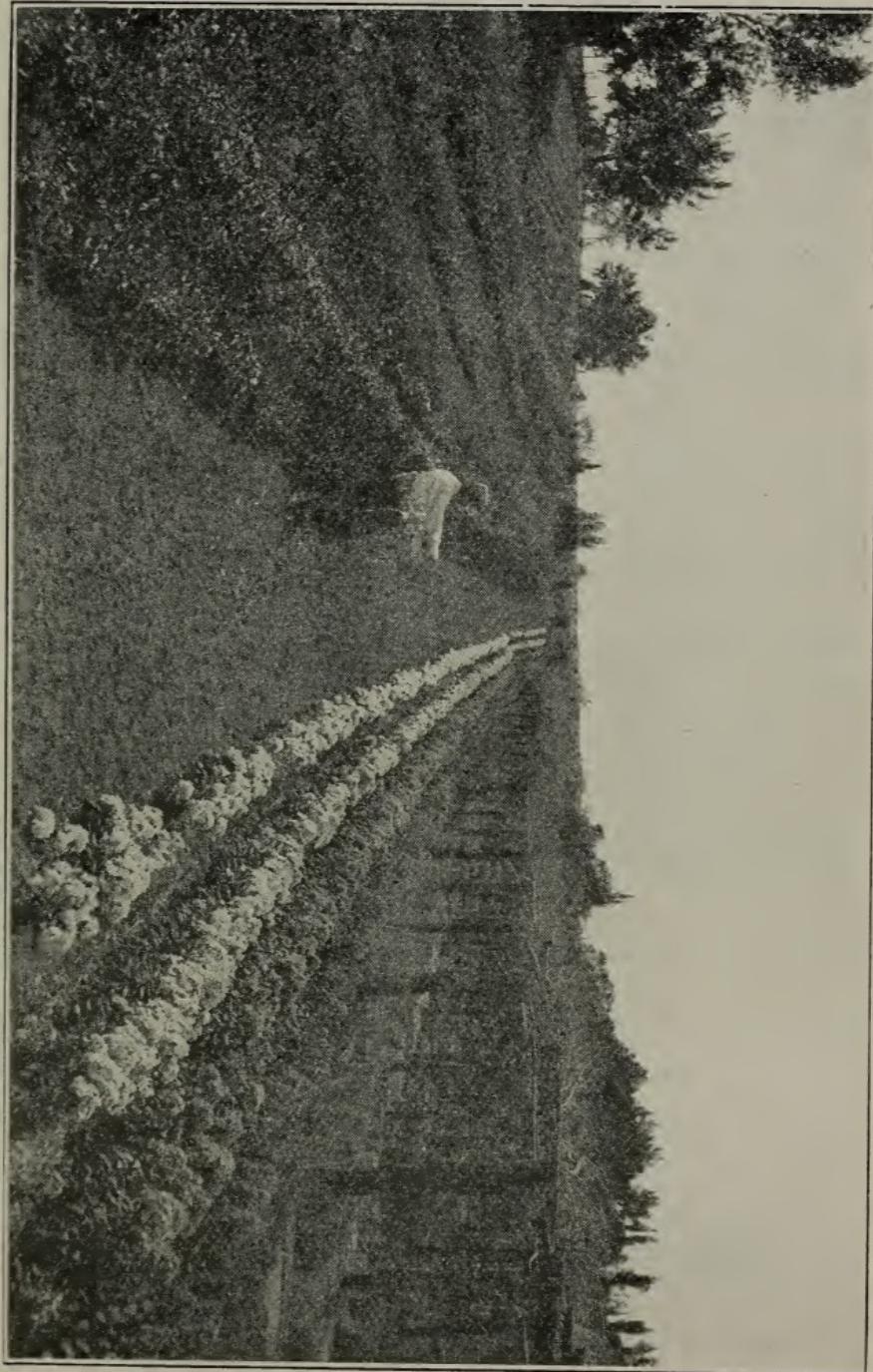
Louis Van Houttei. Dark red, the richest color of our collection, medium season, very early and free blooming. The king of the dark reds, as seen at a distance it fairly glows like a ball of fire. Exceedingly striking and effective in bouquets.



PEONY MARIE LE MOINE

PERENNIAL PHLOX

Those who know only the old fashioned magenta phlox, do not know the possibilities of the showy new varieties for landscape effect. See description of named kinds below. They are all perfectly hardy, enduring our severest winters without



A RIBBON OF PERENNIAL PHLOX IN SEPTEMBER

protection, and when once planted will last a life time if a little pains be taken to divide the roots once in three to five years. This collection embraces the choicest of the modern varieties. The four planted side by side in rows make a gorgeous ribbon on the lawn.

Mrs. Jenkins. Pure white, fine heads formed like a snow-ball, with individual flowers as large as a silver dollar.

Beranger. Bright rose pink with lighter eye, heads of large size, perfect form, plant of medium height.

Lothair. Bright red, pyramidal head, as brilliant a color as can be found among flowers, and the most effective at a distance, the tallest of the collection.

Eclaireur. Dark purple red, with lighter eye, makes a large, broad head, endures drouth and hardship well, in height midway between the two first named.

THE IRIS

This is the blue flag of our grandmother's garden improved and changed so that it can hardly be recognized. Many new colors are now to be had and the size, height and delicacy of form is almost equal to the lily. Once planted it will last for years, and it is one of the things that we find doing well in the coldest, dryest years in the Dakotas. The Iris can be picked when the first flower on the stem opens and will go on and open up new flowers in the house for a week or more.

Florentina Alba. Pure white, early, and very floriferous. Sure to give satisfaction if given half a chance.

Madam Chureau. White, elegantly bordered with violet on the edges, the tallest, and perhaps the most generally popular of all.

Her Majesty. A lovely rose pink, a rare shade in the Iris and one that will be sure to attract attention.

Aurea. Golden yellow, the most popular of its color.

Honorable. yellow with crimson brown falls. In bouquets has something the effect of yellow lady slippers.

Orientalis. Intense blue, tall, extremely hardy, blooming a week or two later than the above.

THE DAHLIA

This is probably the most brilliant of all cultivated flowers, and one that blooms most continuously from July till cut off by autumn frosts. It is as easy to grow as the potato, perhaps easier, as it is almost entirely free from insect troubles. The cultivation is almost exactly like the potato. The tubers should be planted in spring as soon as danger of freezing is over, trained to one stem during the summer, so as to get the best blooming habit and the tubers should be dug and stored before freezing weather. These kinds are the standard decorative varieties of their color, perfectly double with long stems and free blooming habit.

Robert Broomfield. White, the best decorative dahlia of its color.

Sylvia. Light shell pink, flowers about 4 inches in diameter full to the center. A strong, healthy grower.

Jack Rose. Rich red like General Jac rose, a rare combination of size, color and quality with a stem long enough to make it fine for house decoration.

Princess Victoria. Canary yellow, of medium size and exceedingly floriferous.

THE GLADIOLUS

EVERYBODY'S FLOWER

We call the gladiolus everybody's flower because it has a combination of qualities that make it adapted to every one, from the farmer who may grow them in quantity like his potatoes, to the city dweller with a little patch of soil between brick walls.

In ease of culture, brilliance of bloom, durability as a cut flower, and long blooming period, it stands without a peer in the flora world. It is also proving especially adapted to the soil and conditions of the "North Country" even out on the western prairies.

Everybody's flower ought to be in everybody's garden. We are starting a campaign to put it there. We list the most popular varieties, the choicest mixture, and all the directions needed for successful cultivation.

Its cultivation is the simplest of all bulbs whatever. We have sometimes said, "Fill out a row of potatoes with gladiolus, dropping and covering just the same as the potatoes," or "Throw in a gladiolus bulb between each slice of potatoes in the row, covering, cultivating and harvesting with the potatoes." But this is just to show how easy a thing it is to grow. To be exact we advise; Plant from May first to July first five inches deep, right side up, leaving an inch of space between the bulbs. If intended for a show bed four inches apart each way will make a solid mass of flowers from two to four feet high. Good, honest cultivation is all that is needed. Dig the bulbs just before the ground freezes, keep in a dry, cool place through the winter, and you will have a larger lot to plant next season.

America. Light pink, the most popular of all. Very large, but stands without staking. Vigorous and prolific. A wonderful variety, easily deserving the first place in any collection.

Mrs. Francis King. Scarlet. Flowers so large and spikes so tall as to need staking. Vigorous and prolific. Stands next to the America in popularity.

Independence. Light red. The best shade in artificial light. Extremely prolific and easy to grow. In all useful qualities is near the head of the gladiolus list.

Maude. Creamy white with maroon spot on lower petals. One of the very best of the light colored varieties, blooming freely even from the smallest bulbs.

Groffs Hybrids. A mixture of the gayest colors and choicest varieties that are making good in our part of the country.

HARDY PERENNIALS

Shasta Daisy. White, blooms freely all summer, fairly hardy, but should be divided once in two years. A famous production of Luther Burbank.

Gaillardia.* Resembling the daisy in form and habit but of the most brilliant orange and red coloring. About 18 inches high. Blooms freely from June to November, and is of the most dependable hardiness everywhere. For cut flowers there are few things more fully satisfactory.

Bleeding Heart.* One of the old fashioned and well known perennials, with delicate broad, finely cut leaves and long racemes of heart shaped flowers. Well suited to shady places, and of undoubted hardiness.

Larkspur.* The modern larkspur is one of the most stately and effective of all hardy flowers. Blooms in white and in all shades of blue, in spikes a foot long with stems one to three feet high. If cut as soon as the flowers fade, spikes can be cut from July to very late in the fall, as it takes a very severe freeze to kill either the leaves or the blossoms. Absolutely hardy.

Golden Glow.* A strong robust grower, attaining a height of 5 to 6 feet and producing masses of double golden yellow dahlia-like flowers from July to September. Hardy everywhere.

Double Tiger Lily.* An old fashioned flower that has been improved in color effect by the doubling of its blossoms. Few things are easier to grow, or give a richer show during midsummer when the intense heat has withered up a large share of the common flowers. The only true lily that is fully dependable in our climate.

Day Lily.* (Lemon). Handsome plant with narrow foliage and splendid yellow lily-like flowers, about 2 feet high. Delightfully fragrant and of such easy culture that no garden should be without it.

Lily of the Valley. One of the delicate, fairy-like flowers that grow well in shady places and are as hardy as the wildlings.

Tulip. The queen of early flowers, blooming as soon as the ground thaws, and before heavy frosts have ceased. A bed of rich colored kinds will bloom for years without re-setting, and make the dooryard brilliant while everything about is dull and wintry. The tulip can only be set in September and October.

MISCELLANEOUS

Asparagus. We urge all to plant a bed of this hardy, easily cultivated vegetable. The only secret of success is in the liberal use of manure. Once planted it lasts a lifetime, and cares not a pin for drought or cold. Should be planted in rows about 3 feet apart, 18 inches apart in the row.

Pie Plant. The Mammoth or "Wine Plant." An old garden favorite that seems as indispensable now as it did to

our grandmothers. Requires the richest soil in order to reach its best size and quality. 4 feet apart each way.

HEDGES

Buckthorn. The hardiest and best stock fence, and one that can be grown anywhere in the north. Will bear the shears so as to be kept down as low as five feet, or will make a combined fence and windbreak fifteen feet high. Foliage a handsome rich, dark green, growth thrifty and plants do not spread by suckers. Nothing more reliable even for the Dakotas on the list. Plant one foot apart and keep well sheared till the hedge gets a fine bushy bottom.

Berberry Thunbergii. The best low hedge for lawns and parks, becoming very popular all over the country. Makes a thorny hedge 2 to 4 feet high that stands well either in the shade or the sun. Handsome foliage that works well in bouquets, and turns to brilliant shades of red in autumn. Bears bright, coral red berries in great profusion. It can be sheared into a perfect wall of foliage, and leaves nothing to be desired for a low border. Plant 1 foot apart.



HIBERNAL APPLES GROWN IN WALSH COUNTY, NORTH DAKOTA
(See Page 17)

